

PROJECT ADMINISTRATION DATA SHEET



ORIGINAL



REVISION NO. _____

Project No. A-2966DATE: 6/3/81Project Director: Mr. J. D. KnightSchool/Lab EML/RSDSponsor: U. S. Army Missile Command; Redstone Arsenal, AL 35898Type Agreement: Delivery Order No. 0019 under Contract No. DAAH01-81-D-A003Award Period: From 5/27/81 To 9/30/81 (Performance) 11/30/81 (Reports)Sponsor Amount: \$11,101.54

Contracted through:

Cost Sharing: NoneGTRI/~~GIT~~Title: ATBM Analyses Support

ADMINISTRATIVE DATA

OCA CONTACT Duane Hutchison x 4820

- 1) Sponsor Technical Contact: Dr. M. M. Hallum; Systems Simulation and Development Directorate; U. S. Army Missile Command; Attn: DRSMI-RDF; Redstone Arsenal, AL 35898 205/ 876-4141
- 2) Sponsor Admin./Contractual Contact: Mr. Thomas A. Bryant; ONR Resident Representative; Georgia Institute of Technology; 206 O'Keefe Building; Atlanta, GA 30332.

Reports: See Deliverable Schedule Security Classification: UnclassifiedDefense Priority Rating: DO-A2 under DMS Reg. 1

RESTRICTIONS

See Attached DOD Supplemental Information Sheet for Additional Requirements

Travel: Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with Government; except that items costing less than \$1,000 vests with GIT if prior approval to purchase is obtained from the Contracting Officer.

COMMENTS:

COPIES TO:

Administrative Coordinator
Research Property ManagementResearch Security Services
~~Reports~~ Coordinator (OCA)EES Research Public Relations
Project File (OCA)

SPONSORED PROJECT TERMINATION SHEETDate 2/22/82

Project Title: ATEM Analyses Support

Project No: A-2966

Project Director: Mr. J. D. Knight

Sponsor: U. S. Army Missile Command; Redstone

Effective Termination Date: 9/30/81Clearance of Accounting Charges: 11/30/81

Grant/Contract Closeout Actions Remaining:

- ☒ Final Invoice and Closing Documents
☐ Final Fiscal Report
☒ Final Report of Inventions (DD Form 882 required)
☒ Govt. Property Inventory & Related Certificate
☐ Classified Material Certificate
☐ Other _____

Assigned to: EML (School/Laboratory)COPIES TO:

Research Admin. Network
Research Property Management
Accounting
Procurement/EES Supply Services

Research Security Services
~~Reports Coordinator (OCA)~~
Legal Services (OCA)
Library

EES Public Relations (2)
Computer Input
Project File
Other _____

Monthly Technical Report No. 001
and
Monthly Cost and Performance Report No. 001

Report Period
1 June through 30 June 1981

ATBM ANALYSES SUPPORT

J. W. Dalton

Contract No. DAAH01-81-D-A003
Delivery Order No. 0019
Project A-2966

Prepared for

U.S. Army Missile Command
Redstone Arsenal, Alabama 35898
Attn: DRSMI-IYB/Morris

Prepared by

Georgia Institute of Technology
Engineering Experiment Station
Atlanta, Georgia 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

During the reporting period, there has been a concentrated effort to upgrade the analytic simulation in order to perform performance studies against a TBM threat. These modifications include both the engagement system characteristics and the threat scenario.

At this time, the non-aircraft threat characteristics are being incorporated into the all digital simulation using digital algorithms for the threat trajectory.

The system parameters were developed for an aircraft engagement; therefore, certain parameters will be modified to improve the performance against the enhanced threat of the TBM's.

PROBLEMS ENCOUNTERED

None

WORK TO BE DONE

The all digital simulation will be modified to improve the system response and additional modeling will be incorporated to determine system physical constraints such as radome effects on system guidance.

COST INFORMATION

The following charges have been incurred against the contract during the period June 1 through June 30, 1981.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 1,643.51	
Materials and Supplies	0	
Travel	0	
Overhead (at 73% of PS)	1,199.76	
Retirement (at 11.11% of PS)	182.60	
TOTAL	\$ 3,025.87	

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Manhours</u>
Principal Research Scientists/Engineers	0	0
Senior Research Scientists/Engineers	\$ 1,517.61	79.0
Research Scientists II/Engineers II	125.90	8.0
Research Scientists I/Engineers I	0	0
Technicians/Draftsmen	0	0
Students	0	0
Secretarial/Clerical/Other	0	0
TOTAL	\$ 1,643.51	87.0

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Free Balance</u>
Personal Services	\$ 4,402.12	\$ 1,643.51	\$ 2,758.61
Materials and Supplies	0	0	0
Travel and Shipping	3,000.00	0	3,000.00
Computer	0	0	0
Overhead	3,258.07	1,199.76	2,058.31
Retirement	441.35	182.60	258.75
Encumbered	0	0	0
FUNDING	\$11,101.54	\$ 3,025.87	\$ 8,075.67

Based on present full funding, the funding and equivalent manhours are sufficient to complete the task. Approximately 25% of the proposed task has been completed.

Monthly Technical Report No. 002
and
Monthly Cost and Performance Report No. 002

Report Period
1 July through 31 July 1981

ATBM ANALYSES SUPPORT

J. W. Dalton

Contract No. DAAH01-81-D-A003
Delivery Order No. 0019
Project A-2966

Prepared for

U.S. Army Missile Command
Redstone Arsenal, Alabama 35898
Attn: DRSMI-IYB/Morris

Prepared by

Georgia Institute of Technology
Engineering Experiment Station
Atlanta, Georgia 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

During this reporting period, the main effort has been to analyze the results of the digital simulation and compare to the results of previous RFSS data. This validation process is required in order to establish a baseline simulation for use with the radome model which has been designed in an algorithm form. This radome model has been established; however, the actual radome data from the wine cellar should be available in the near future for incorporation into the digital simulator. Once this radome data is incorporated, and the simulator baseline established, the next step is to perform some sensitivity studies.

PROBLEMS ENCOUNTERED

None

WORK TO BE DONE

Sensitivity studies using the digital simulator with the radome model against the TBM threat should help provide data to establish trends in the system response to this type threat.

COST INFORMATION

The following charges have been incurred against the contract during the period July 1 through July 31, 1981.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	0	
Materials and Supplies	0	
Travel	0	
Overhead (at 73% of PS)	0	
Retirement (at 11.11% of PS)	0	
TOTAL	0	

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Manhours</u>
Principal Research Scientists/Engineers	0	0
Senior Research Scientists/Engineers	0	0
Research Scientists II/Engineers II	0	0
Research Scientists I/Engineers I	0	0
Technicians/Draftsmen	0	0
Students	0	0
Secretarial/Clerical/Other	0	0
TOTAL	0	0

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Free Balance</u>
Personal Services	\$ 4,402.12	\$ 1,643.51	\$ 2,758.61
Materials and Supplies	0	0	0
Travel and Shipping	3,000.00	0	3,000.00
Computer	0	0	0
Overhead	3,258.07	1,199.76	2,058.31
Retirement	441.35	182.60	258.75
Encumbered	0	0	0
FUNDING	\$11,101.54	\$ 3,025.87	\$ 8,075.67

Based on present full funding, the funding and equivalent manhours are sufficient to complete the task. Approximately 25% of the proposed task has been completed.

A-2966

Monthly Technical Report No. 003
and
Monthly Cost and Performance Report No. 003

Report Period
1 August through 31 August 1981

ATBM ANALYSES SUPPORT

J. W. Dalton

Contract No. DAAH01-81-D-A003
Delivery Order No. 0019
Project A-2966

Prepared for

U.S. Army Missile Command
Redstone Arsenal, Alabama 35898
Attn: DRSMI-IYB/Morris

Prepared by

Georgia Institute of Technology
Engineering Experiment Station
Atlanta, Georgia 30332

WORK PERFORMED DURING THIS REPORTING PERIOD

During this reporting period, the simulator validation effort has resulted in several modifications as follows:

- (1) Removal of programmed transport lags in the modeling of the airframe, autopilot and guidance,
- (2) Increased the data rate of the measured body states and target states to match the actual system hardware,
- (3) Modified the integration scheme used to calculate the missile rotational attitudes in order to weight the present measurements much heavier than the past measurements.

These modifications have resulted in improved simulator modeling of the actual hardware as compared to results from the RFSS. With this validation process basically complete, the sensitivity studies were begun without the radome data from the Wine Cellar. The radome data have been delayed due to data reduction problems.

The final report will include the sensitivity studies results without the radome plus the radome model structure and data if available prior to publishing date.

The standoff jammer model was implemented and checked out; however, some concern exists as to the characteristics of the jamming equipment. This model should provide a realistic tool for determining missile system response to high power noise jamming for future studies.

PROBLEMS ENCOUNTERED

None

WORK TO BE DONE

Final report to be completed and published.

COST INFORMATION

The following charges have been incurred against the contract during the period August 1 through August 31, 1981.

	<u>Expended</u>	<u>Encumbered</u>
Personal Services (PS)	\$ 4,378.73	
Materials and Supplies	27.59	
Travel	-0-	
Overhead (at 75% of PS)	3,284.05	
Retirement (at 11.11% of PS)	486.48	
TOTAL	<u>\$ 8,176.85</u>	<u>-0-</u>

The breakdown of personal services is as follows:

	<u>Dollars</u>	<u>Approximate Manhours</u>
Principal Research Scientists/Engineers	-0-	-0-
Senior Research Scientists/Engineers	\$2,048.52	106.0
Research Scientists II/Engineers II	1,745.19	114.0
Research Scientists I/Engineers I	585.02	48.0
Technicians/Draftsmen	-0-	-0-
Students	-0-	-0-
Secretarial/Clerical/Other	-0-	-0-
TOTAL	<u>\$4,378.73</u>	<u>268.0</u>

The current financial status of the contract is as follows:

	<u>Budget As Proposed</u>	<u>Expended</u>	<u>Encumbered</u>	<u>Free Balance</u>
Personal Services	\$ 4,402.12	\$ 6,022.24	-0-	(\$1,620.12)
Materials and Supplies	-0-	27.59	-0-	(27.59)
Travel and Shipping	3,000.00	-0-	-0-	3,000.00
Retirement	441.35	669.08	-0-	(227.73)
Overhead	3,258.07	4,483.81	-0-	(1,225.74)
FUNDING	<u>\$11,101.54</u>	<u>\$11,202.72</u>	<u>-0-</u>	<u>(\$ 101.18)</u>

Based on present full funding, the funding and equivalent manhours are sufficient to complete the task. Approximately 99% of the proposed task has been completed.